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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/788,672	02/21/2001	Makoto Oyanagi	Q62837	6037

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SUGHRUE, MION, ZINN, MACPEAK & SEAS, PLLC
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WASHINGTON, DC 20037-3213

EXAMINER

THOMPSON, JAMES A

ART UNIT	PAPER NUMBER
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2624

DATE MAILED: 09/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/788,672

Applicant(s)

OYANAGI ET AL.

Examiner

James A. Thompson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-8, 15 and 21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-8, 15 and 21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 February 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ✓ ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

Response to Amendment

1. Since the proposed amendments to the claims merely cancel claims and do not alter the limitations recited in the non-canceled claims, the proposed amendments to the claims are entered.

Response to Arguments

2. Applicant's arguments, see pages 5-9, filed 06 September 2005, with respect to the prior art rejections of the claims have been fully considered and are persuasive. The prior art rejections of the claims listed in items 4-10 of the previous office action, dated 11 May 2005, have been withdrawn.

Accordingly, prosecution as to the merits of the present application is hereby reopened. Prior art rejections with regard to the presently pending claims are given in detail below.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. Claims 2 and 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeoka (US Patent 6,665,082 B1) in view of Chen (US Patent 5,684,934) and *In re Dulberg* (289 F.2d 522, 523, 129 USPQ 348, 349 (CCPA 1961)).

Regarding claim 2: Takeoka discloses a printer (figure 2 of Takeoka) comprising a print start detector (figure 2(25) of Takeoka) configured to detect that a print start signal, which indicates a start of a transmission of printing data (column 10, lines 21-24 of Takeoka), is received from the computer (figure 9 of Takeoka) (column 10, lines 21-26 of Takeoka); a data buffer (figure 2(22) of Takeoka) configured to temporarily store the printing data received from the computer (figure 9 and column 12, lines 58-64 of Takeoka); a print finish detector (figure 2(25) of Takeoka) configured to detect that a print finish signal (printer deactivation command), which indicates a finish of the transmission of the printing data, is received from the computer (column 12, lines 60-65 of Takeoka); and a clearer (figure 2(21) and column 9, lines 66-67 of Takeoka) configured to clear the printing data stored in the data buffer when a printer deactivation command is received (column 12, lines 63-64 of Takeoka).

Takeoka does not disclose expressly that said clearer clears the printing data stored in the data buffer when the print start signal is received again from the computer or another computer after the print start detector has detected the print start signal and before the print finish detector detects the print finish signal; and that the print start detector and print finish detector are separate devices.

Chen discloses a clearer (figure 3(37) of Chen) that clears the printing data stored in the data buffer (column 4, lines 12-

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20 of Chen) when a print start signal is received again (column 4, lines 47-52 of Chen) from the computer or another computer (column 3, lines 29-32 of Chen) after the print start detector has detected the print start signal (column 3, lines 35-38 of Chen) and before the print finish detector detects the print finish signal (column 4, lines 27-32 of Chen). When an error condition occurs, the clearer (figure 3(37) of Chen) clears the upstream printing data (column 4, lines 12-20 of Chen), which is printing data stored in a data buffer (column 4, lines 37-40 of Chen). The error condition naturally occurs during the printing process, and thus after the print start signal is detected and before the print finish signal is detected (column 3, lines 35-38 and column 4, lines 27-32 of Chen). The feedback and reprint signals of the error recover operation constitute a print start signal that is sent again (column 4, lines 49-52 of Chen) since the error recovery includes print start signals which signal a reprint of the cleared print data (column 11, lines 46-50 of Chen).

Takeoka and Chen are combinable because they are from the same field of endeavor, namely the control of printers and print job data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the clearer taught by Chen in the system of Takeoka. The motivation for doing so would have been allow for print recovery when printing errors occur, without having to reprint the entire print job (column 1, lines 61-63 of Chen). Therefore, it would have been obvious to combine Chen with Takeoka.

Takeoka in view of Chen does not disclose expressly that the print start detector and print finish detector are separate devices. However, it would have been obvious to one of ordinary

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skill the art at the time of the invention to embody said print start detector and said print finish detector in two separate units since *In re Dulberg* has held that making parts separable is an obvious design choice if there are no novel and unexpected results.

Regarding claim 4: Takeoka discloses that the print start signal is a device ID request (figure 2(25C) and column 10, lines 15-21 of Takeoka) which the computer transmits for confirming a model of the printer (column 10, lines 20-21 of Takeoka).

Regarding claim 5: Takeoka discloses that the print start signal is a predetermined string (figure 2(25C) and column 10, lines 15-21 of Takeoka) which the computer transmits before a start of the transmission of the printing data (column 6, lines 60-67 of Takeoka). The device ID data is part of the data that is transmitted (column 10, lines 15-21 of Takeoka) and is transmitted as part of the cycle-start packet, which is transmitted first (column 6, lines 60-67 of Takeoka), and therefore before the transmission of the printing data.

5. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takeoka (US Patent 6,665,082 B1) in view of Chen (US Patent 5,684,934) and *In re Dulberg* (289 F.2d 522, 523, 129 USPQ 348, 349 (CCPA 1961)) as applied to claim 2 above, and further in view of Sakurai (US Patent 5,924,802).

Regarding claim 3: Takeoka in view of Chen and *In re Dulberg* does not disclose expressly that the printer does not have a cable detector which directly detects that a printer cable connected to the computer is unplugged.

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Sakurai discloses an algorithm (figure 5 of Sakurai) that is performed by the computer (column 5, lines 57-61 of Sakurai) which includes detecting whether a printer cable is connected normally or not (figure 5(S105) and column 6, lines 5-10 of Sakurai). Since the detection of whether or not the printer cable is connected normally is accomplished by the execution of an algorithm by a computer, then the printer does not have a cable connector which *directly* detects that a printer cable connected to the computer is unplugged. Said detection is performed indirectly via a computer algorithm.

Takeoka in view of Chen and *In re Dulberg* is combinable with Sakurai because they are from the same field of endeavor, namely the control of printers and print job data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to algorithmically determine whether or not a printer cable is unplugged, as taught by Sakurai. The suggestion for doing so would have been that an unplugged printer cable is clearly an error condition, which is correctable according to the teachings of Chen. Further, the error recovery processing taught by Chen is performed using computer data processing, so a digital signal obtained from an algorithmic processing, as taught by Sakurai, would clearly be better suited for operating with the error recovery taught by Chen. Therefore, it would have been obvious to combine Sakurai with Takeoka in view of Chen and *In re Dulberg* to obtain the invention as specified in claim 3.

6. Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeoka (US Patent 6,665,082 B1) in view of Chen (US Patent 5,684,934) and *In re Dulberg* (289 F.2d 522, 523,

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129 USPQ 348, 349 (CCPA 1961)) as applied to claim 2 above, and further in view of Sakurai (US Patent 5,924,802) and Han (US Patent 5,991,542).

Regarding claim 6: Takeoka in view of Sakurai and *In re Dulberg* does not disclose expressly that said print start signal is a cable plug/unplug effective command which the computer transmits before a start of the transmission of the printing data, and said print finish signal is a cable plug/unplug ineffective command which the computer transmits after a finish of the printing data.

Sakurai discloses a cable plug/unplug effective command and a cable plug/unplug ineffective command (column 6, lines 8-12 of Sakurai). A positive determination that the printer cable is normally connected is a cable plug/unplug effective command. A negative determination that the printer cable is normally connected is a cable plug/unplug ineffective command.

Takeoka in view of Chen and *In re Dulberg* is combinable with Sakurai because they are from the same field of endeavor, namely the control of printers and print job data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to determine whether or not a printer cable is unplugged, as taught by Sakurai. The suggestion for doing so would have been that an unplugged printer cable is clearly an error condition, which is correctable according to the teachings of Chen. Therefore, it would have been obvious to combine Sakurai with Takeoka in view of Chen and *In re Dulberg*.

Takeoka in view of Chen, *In re Dulberg*, and Sakurai does not disclose expressly that said print start signal is a cable plug/unplug effective command which the computer transmits before a start of the transmission of the printing data, and

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said print finish signal is a cable plug/unplug ineffective command which the computer transmits after a finish of the printing data.

Han discloses mounting a drive image at a computer before launching a specific application (column 9, lines 46-50 of Han). The mounted drive image is marked as "owned" by said specific application (column 9, lines 55-57 of Han). Once said specific application finishes processing, said drive image is unmounted by the computer (column 9, lines 57-61 of Han), which inherently requires the sending of some unmount signal.

Takeoka in view of Chen, *In re Dulberg*, and Sakurai is combinable with Han because they are from the same field of endeavor, namely the control of computer peripheral devices. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to mount and mark as owned a peripheral device before executing a computer process and unmounting said peripheral device when said computer process is completed, as taught by Han, said peripheral device being the printer taught by Takeoka in view of Chen, *In re Dulberg*, and Sakurai. The mounting and owning signal would be the same as a cable plug/unplug effective command since both confirm the connection of the peripheral device and mark said peripheral device for a particular use. The unmounting signal would be the same as a cable plug/unplug ineffective command since both reset the connection to the peripheral device and the associated variables since said peripheral device is no longer being used. The motivation for doing so would have been to associate different peripheral devices with different specific, pre-defined actions (column 9, lines 29-31 of Han). Therefore, it would have been obvious to combine Han with Takeoka in view of

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Chen, *In re Dulberg*, and Sakurai to obtain the invention as specified in claim 6.

Regarding claim 7: Takeoka discloses a packet receiving detector (figure 2(25) of Takeoka) configured to detect that the printer is receiving any packet (column 10, lines 21-24 of Takeoka); and that the clearer (figure 2(21) of Takeoka) clears the printing data stored in the data buffer (column 12, lines 37-41 of Takeoka) if the packet receiving detector detects that the printer is receiving the packet (column 12, lines 18-20 of Takeoka) even when the print start signal is received (column 12, lines 7-10 of Takeoka). The printing data received by the printer is stored successively in FIFO memory (column 12, lines 37-41 of Takeoka), which means that when the printing data in the FIFO memory has been read out, it will be replaced by further printing memory, and thus cleared. The image data is sent when the printing head starts to operate (column 12, lines 7-10 of Takeoka), and thus when the print start signal is received (column 10, lines 31-33 of Takeoka).

Takeoka in view of Chen does not disclose expressly that said packet receiving detector is a separate unit. However, it would have been obvious to one of ordinary skill the art at the time of the invention to embody said packet receiving detector as a separate unit since *In re Dulberg* has held that making parts separable is an obvious design choice if there are no novel and unexpected results.

Regarding claim 8: Takeoka discloses that a plurality of logical channels are established between the computer and the printer (figure 2(channels between 10 and 25, 25A, 25B, 25C) and column 10, lines 13-21 of Takeoka), and the cable plug/unplug effective command and the cable plug/unplug ineffective command

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are transmitted and received by at least one of the logical channels (column 10, lines 13-21 of Takeoka). The communication control circuit (figure 2(25) of Takeoka) controls the transmission of data to the printer (column 10, lines 13-21 of Takeoka) and therefore the cable plug/unplug effective command and the cable plug/unplug ineffective command.

7. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takeoka (US Patent 6,665,082 B1) in view of Chen (US Patent 5,684,934) and *In re Dulberg* (289 F.2d 522, 523, 129 USPQ 348, 349 (CCPA 1961)) as applied to claim 2 above, and further in view of Ryu (US Patent 5,978,921).

Regarding claim 15: Takeoka discloses that the printer has operating keys and a status display circuit (figure 2(24) of Takeoka) for selecting the settings of the printer and displaying the status of the printer (column 10, lines 9-13 of Takeoka). The printing data stored in the data buffer is cleared based on a printer deactivation command (column 12, lines 63-65 of Takeoka) and the operations of the printer are controlled by the system controller (column 9, lines 66-67 of Takeoka). The printer of Takeoka does not have a control panel for the user to operate for clearing the printing data stored in the data buffer.

Takeoka in view of Chen and *In re Dulberg* does not disclose expressly that the printer does not have a power switch for a user to turn ON/OFF a power supply.

Ryu discloses the control of the power of a peripheral device by the computer system (figures 7A-7B and column 6, lines 30-34 of Ryu), and therefore by computer software embodied in said computer system.

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Takeoka in view of Chen and *In re Dulberg* is combinable with Ryu because they are from the same field of endeavor, namely the control of computer peripheral devices. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use software to control the power of the peripheral, as taught by Ryu, said peripheral being the printer taught by Takeoka in view of Chen and *In re Dulberg*. Since software is used to control the power of the printer, and not a power switch, then the printer would not have a power switch for a user to turn ON/OFF a power supply. The motivation for doing so would have been to save electrical power when a peripheral device is not in use (column 1, lines 13-18 of Ryu). Therefore, it would have been obvious to combine Ryu with Takeoka in view of Chen and *In re Dulberg* to obtain the invention as specified in claim 15.

8. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takeoka (US Patent 6,665,082 B1) in view of Chen (US Patent 5,684,934).

Regarding claim 21: Takeoka discloses detecting that a print start signal, which indicates a start of a transmission of printing data (column 10, lines 21-24 of Takeoka), is received from the computer (figure 9 of Takeoka) (column 10, lines 21-26 of Takeoka); temporarily storing the printing data received from the computer (figure 9 and column 12, lines 58-64 of Takeoka) in a data buffer (figure 2(22) of Takeoka); detecting that a print finish signal (printer deactivation command), which indicates a finish of the transmission of the printing data, is received from the computer (column 12, lines 60-65 of Takeoka); and clearing the printing data stored in the data buffer when a

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printer deactivation command is received (column 12, lines 63-64 of Takeoka).

Takeoka does not disclose expressly that the printing data stored in the data buffer is cleared when the print start signal is received again from the computer or another computer after the print start detector has detected the print start signal and before the print finish detector detects the print finish signal.

Chen discloses a clearing the printing data stored in the data buffer (column 4, lines 12-20 of Chen) when a print start signal is received again (column 4, lines 47-52 of Chen) from the computer or another computer (column 3, lines 29-32 of Chen) after detecting the print start signal (column 3, lines 35-38 of Chen) and before detecting the print finish signal (column 4, lines 27-32 of Chen). When an error condition occurs, upstream printing data, which is printing data stored in a data buffer (column 4, lines 37-40 of Chen), is cleared (column 4, lines 12-20 of Chen). The error condition naturally occurs during the printing process, and thus after the print start signal is detected and before the print finish signal is detected (column 3, lines 35-38 and column 4, lines 27-32 of Chen). The feedback and reprint signals of the error recover operation constitute a print start signal that is sent again (column 4, lines 49-52 of Chen) since the error recovery includes print start signals which signal a reprint of the cleared print data (column 11, lines 46-50 of Chen).

Takeoka and Chen are combinable because they are from the same field of endeavor, namely the control of printers and print job data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the

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clear the print data using the error recovery taught by Chen in the system of Takeoka. The motivation for doing so would have been allow for print recovery when printing errors occur, without having to reprint the entire print job (column 1, lines 61-63 of Chen). Therefore, it would have been obvious to combine Chen with Takeoka to obtain the invention as specified in claim 21.

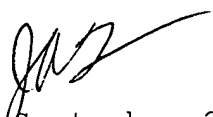
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A. Thompson whose telephone number is 571-272-7441. The examiner can normally be reached on 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K. Moore can be reached on 571-272-7437. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

James A. Thompson
Examiner
Art Unit 2624



16 September 2005



THOMAS D.
~~THOMAS~~ LEE
PRIMARY EXAMINER